



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,204	02/22/2005	Naohiko Takeyama	Q86245	7746
23373	7590	04/10/2009	EXAMINER	
SUGHRUE MION, PLLC			SYKES, ALTREV C	
2100 PENNSYLVANIA AVENUE, N.W.				
SUITE 800			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20037			1794	
			MAIL DATE	DELIVERY MODE
			04/10/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/525,204	TAKEYAMA ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	ALTREV C. SYKES	1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1,3-16 and 28-33 is/are pending in the application.
- 4a) Of the above claim(s) 12-16 and 28-31 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1,3-11,32 and 33 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. ____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date <u>20081017</u>	6) <input type="checkbox"/> Other: ____ .

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 14, 2009 has been entered.

***Response to Amendment***

2. The amendment to the claims filed on January 14, 2009 is acknowledged by examiner and has been entered. Claims 2, 17-27 and 34 have been cancelled. Claims 12-16 and 28-31 are withdrawn from consideration. Claims 1, 3-11 and 32-33 have been examined on the merits as set forth below.

***Response to Arguments***

3. Applicant's arguments with respect to claims 1, 3-11, and 32-33 have been considered but are moot in view of the new ground(s) of rejection. Examiner notes the added limitation of the second substrate layer containing no elastic polymer.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
  1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 1-6, 8-11, and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ashida et al. (US 5,503,899) in view of Okamoto et al. (US 3,705,226)

Regarding claims 1 and 4, Ashida et al. discloses a suede-like artificial leather which is composed of fiber bundles and an elastomeric polymer and has fibrous nap on its surface. Ashida et al. discloses the fiber bundles are composed of fine fibers (A) and microfine fibers (B), said fiber bundles not substantially containing the elastomeric polymer in the interspaces among the individual fibers constituting each of the fiber bundles. (See Abstract) Ashida et al. discloses the artificial leather has good appearance and hand (i.e. soft touch). (See Abstract and Col 1, lines 10-16) Regarding the limitation of a second substrate layer composed of a bundle of fine fibers, examiner notes that

applicant discloses that the second substrate layer is a non-impregnated layer. (See pg. 11 of applicant remarks and pg. 10, lines 11-16) Additionally, examiner notes that applicant discloses in the examples the surface of the sheet product was polished with abrasive paper to nap the fiber on the surface so as to obtain a leather-like sheet product. (See pg. 61, lines 24-27) Therefore, examiner has reason to believe that the second substrate layer as claimed by applicant is nothing more than a napped surface. Ashida et al. discloses at least one of the surfaces of each sheet is given a napping treatment (i.e. buffing with sand paper) to form a napped surface composed chiefly of the fine and microfine fibers. (See Col 6, lines 52-57) As such, examiner equates the fibrous napped surface of Ashida et al. to that claimed by applicant for the second substrate layer. Ashida discloses all of the claim limitations as set forth above, but the reference does not specifically disclose that concentration of the elastic polymer in the first substrate layer changes continuously in the direction of thickness.

Okamoto et al. discloses an artificial leather having a very natural leather-like internal configuration together with an excellent suede touch on one surface thereof. (See Col 2, lines 48-53) Okamoto et al. further discloses the surface of the fibrous sheet layer may be coated with elastic high polymer using a gravure coater. (See Col 6, lines 16-17) Examiner notes that applicant acknowledges that the continuous change in the concentration of the elastic polymer is made by applying a solution of an elastic polymer to one side of a sheet. (See pg. 12 of Applicant remarks) Therefore, examiner has reason to believe that the concentration of the elastic polymer of Okamoto et al. would also change continuously in the direction of thickness.

As Ashida et al. and Okamoto et al. are both directed to leather-like sheet products, the art is analogous. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention motivated by expected success to utilize the application method of gravure coating as taught by Okamoto et al. in place of the generalized impregnation as disclosed by Ashida et al. in order to provide the completely expected result of a substrate layer having fiber bundles and an elastomeric polymer.

Regarding claim 3, modified Ashida et al. discloses all of the claim limitation as set forth above. Okamoto et al. further discloses a covering layer wherein a high-polymeric substance layer is formed on one surface of the basic fibrous sheet layer. (See Col 5, lines 71-75 and Col 6, lines 1-7)

Regarding claim 4, Okamoto et al. further discloses the surface layer has a thickness in the range from 0.02 to 5mm. (i.e. 20 to 5000 $\mu$ m) (See Col 7, lines 14-17)

Regarding claims 6 and 32, Ashida fails to teach wherein the total thickness of the first substrate layer and the second substrate layer is 0.2 to 5mm. It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the thickness since it has been held that, where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). Ashida discloses one of the surfaces of this substrate was buffed to be adjusted to a thickness of up to 1.20mm, and thereafter the other surface was treated with an emery raising machine to form a napped surface in which the fine and microfine fibers were raised. (See Col 7, lines 47-50) Okamoto et al. further discloses the surface layer has a

thickness in the range from 0.02 to 5mm. (i.e. 20 to 5000 $\mu$ m) (See Col 7, lines 14-17)

The burden is upon the Applicant to demonstrate that the claimed thickness is critical and has unexpected results. In the present invention, one would have been motivated to optimize the thickness motivated by the desire to tailor the appearance and hand of the final leather-like sheet product. (See Ashida Example 1)

Regarding claims 8 and 33, Ashida et al. discloses the amount of polyurethane in the fibrous substrate, as solid, is preferably within a range of 10-50% by weight. (See Col 6, lines 29-32) Therefore, examiner notes that the claimed weight ratio of applicant would have been a case of *prima facie* obviousness in view of the Ashida disclosure. Further, since Ashida et al. discloses the polyurethane in the fibrous substrate is in solid form, examiner has reason to believe that the first substrate layer would also be solid.

Regarding claim 9, Ashida et al. discloses the fine fibers of the fiber bundle have a denier of 0.2 or less. (See Col 3, lines 63-67 and Col 4, line 1) However, the reference is silent as to a total number of fibers in the bundle.

Okamoto et al. discloses a fibrous bundle of from 0.001 to 0.5 denier fineness and from 3 to 5,000 fibers. (See Col 3, lines 47-49 and 59-61)

As the fineness of the two prior art references overlap, one of ordinary skill in the art would have been easily motivated to combine the two disclosures to arrive at the claim limitations of applicant.

Regarding claim 10, Ashida et al. discloses the elastomeric polymer is polyurethane. (See Col 6, lines 6-21) Ashida et al. further discloses that the fibrous substrate is treated with a liquid which is a non-solvent for the fiber bundle and the

elastomeric polymer. (See Col 6 lines 33-37) As the liquid, toluene is used. (See Col 6, line 37)

Regarding claim 11, Ashida et al. discloses the elastomeric polymer is polyurethane or a polyurethane composition. (See Col 6, lines 6-21) While Ashida does not specifically disclose the elastic polymer is porous, examiner has reason to believe that the elastomeric polyurethane would meet the claim limitation. Evidence for this conclusion is found in Okamoto et al. which discloses a surface covering formed of polyurethane polymers, which may be made thick or thin to tailor the porous nature of the surface. (See Col 5, lines 71-75 and Col 6, lines 1-7) Therefore, one of ordinary skill in the art would have appreciated the suggestion of Okamoto to use a polyurethane polymer as a porous elastic material.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ashida et al. (US 5,503,899) in view of Okamoto et al. (US 3,705,226) as applied to claim 1 above, and further in view of Morishima et al. (US 2001/0038901)

Regarding claim 7, modified Ashida et al. discloses all of the claim limitations as set forth above, but the reference does not specifically disclose the fiber bundle accounts for 40 to 80% of the total space area of all the voids in the elastic polymer surrounding the fiber bundle of the first substrate layer in the section perpendicular to the surface of the leather-like sheet product.

Morishima et al. discloses a nonwoven fabric made from filaments for use as a base fabric for artificial leather. (See [0002]) Morishima et al. further discloses the total area occupied by the fiber bundles is in a range of 5-70% of the cross-sectional area of

any cross-section perpendicular to the direction of thickness of the nonwoven fabric. (See [0019]) Morishima et al. discloses that an artificial leather may be produced resulting in lower bending resistance so that a structure is provided with denseness together with softness and both a full and tight handling property. (See [0040])

As modified Ashida et al. and Morishima et al. are both directed to artificial leather products, the art is analogous. Therefore, it would have been obvious to one of ordinary skill in the art motivated by expected success at the time of the invention to utilize 5-70% of the voids in the elastic polymer for the fiber bundles as taught by Morishima et al. in the suede-like leather sheet product of modified Ashida et al. in order to produce a structure provided with denseness, softness, and both a full and tight handling property. (See [0040])

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Umezawa et al (US 4,390,566) discloses a leather-like sheet material which , though soft, has good mechanical properties.
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALTREV C. SYKES whose telephone number is (571)270-3162. The examiner can normally be reached on Monday-Thursday, 8AM-5PM EST, alt Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/525,204  
Art Unit: 1794

Page 10